

## Claims

1. A termination circuit for a subscriber line interface connected to a transmission medium for bi-directional communication of both voice and data signals, said termination circuit comprising:

detection means to detect voice and data signals at a connection point to said transmission medium;

a voice band return loss means monitoring said voice and data signals and generating a voice band return signal to be forwarded to said connection point, said return signal being a representation of said voice band signal; and

a voice band filter connected to said return loss means said voice band filter isolating said voice band return loss signal from said data band signal.

2. A termination circuit for a subscriber line interface connected to a transmission medium for bi-directional communication of both voice and data signals, said termination circuit comprising:

detection means to detect voice and data signals at a connection point to said transmission medium;

a data band return loss means monitoring said voice and data signals and generating a data band return signal to be forwarded to said connection point, said data band return signal being a representation of said data band signal; and

a data band filter connected to said return loss means said data band filter isolating said data band return loss signal from said voice band signal.

3. A termination circuit for a subscriber line interface connected to a transmission medium for bi-directional communication of both voice and data signals, said termination circuit comprising:

detection means to detect voice and data signals at a connection point to said transmission medium;

a voice band return loss means monitoring said voice and data signals and

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generating a voice band return signal to be forwarded to said connection point, said return signal being a representation of said voice band signal;

5 a data band return loss means monitoring said voice and data signals and generating a data band return signal to be forwarded to said connection point, said data band return signal being a representation of said data band signal;

a voice band filter connected to said return loss means said voice band filter isolating said voice band return loss signal from said data band signal; and

a data band filter connected to said return loss data band means, said data band filter isolating said data band return loss signal from said voice band signal.

10 4. A termination circuit as defined in claim 1, wherein said communications medium is a twisted copper pair.

5 5. A termination circuit as defined in claim 1, wherein said bi-directional communication is implemented utilizing a Digital Subscriber Line (DSL) scheme.

20 6. A system for canceling a transhybrid component and a near end echo from a data band signal at an communication system interface for bi-directional communication of voice and data band signals over a common communication medium, said circuit comprising:

an analog circuit to estimate said transhybrid component value and said near end echo value and to subtract said estimated values from an incoming data signal; and

an analog data band filter to restrict the estimation to said data band signal.

25 7. A system as defined in claim 6 having an analog to digital converter for digitizing said incoming data signal after said transhybrid component and near end echo have been canceled.



14. A method of canceling a transhybrid component and near end echo from a data signal at an interface to a communication system for bi-directional communication of voice and data band signals over a common interface comprising: providing an analog circuit for removing said transhybrid component and near end echo from an incoming signal; and providing an analog data band filter for preventing data band interference on the voice band signal.

15. The method of claim 14 further comprising the step of providing an analog to digital converter for digitizing said voice and data band signals.

16. The method of claim 15 wherein said incoming signal after cancellation of transhybrid components and near end echo is separated into voice band and data band signals utilizing a voice band filter and a data band filter respectively and digitized by separate analog to digital converters.

17. The method of claim 15 wherein said incoming signal after cancellation of transhybrid components and near end echo is separated into voice band and data band signals, scaled as separate signals, added together to form a composite signal and digitized in an analog to digital converter.

18. The method of claim 15 wherein said incoming signal after cancellation of transhybrid components and near end echo is separated into voice band and data band signals utilizing a voice band filter and a data band filter respectively, said separate signals being scaled and added together as a scaled composite signal and digitized by an analog to digital converter.